GRANT SUMMARY

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Use the tab and arrow keys to move through the form. If field is not applicable, please put N/A in field.

Date filled out: June 28, 2007

Grant Information: Please use complete phrases/sentences. Fields will expand as you type.

1. **Grant Agreement Number:** 06-294-559-0

2. **Project Title:** Ensuring Biological Integrity of Nonperennial Streams

3. **Project Purpose – Problem Being Addressed:** Until recently, most freshwater water quality monitoring programs (including NPDES monitoring) in California have focused on indirect measures of the ecological condition of waterbodies using conventional water quality measurements like chemical concentrations. Over the past 10 years however, many environmental managers in the state have come to realize that information about the biological condition of streams is necessary for a complete understanding of stream health. Bioassessment, the science of describing the condition of waterbodies from the organisms that live in them, is well established as a valuable tool for water resource management. Because assemblages of aquatic organisms (e.g., fish, benthic macroinvertebrates (BMIs) and algae) are comprised of taxa that are differentially responsive to different environmental stressors, bioassessments provide a direct means of measuring the attainment of the beneficial uses identified in the San Diego Basin Plan. Further, because aquatic organisms typically live in a given habitat for months to years, the use of biological endpoints offers a means of estimating cumulative effect of all anthropogenic stressors acting within a watershed (including multiple chemical and physical habitat stressors). Ultimately, BMIs represent the actual beneficial use (i.e., aquatic life) that we are trying to protect.

The use of BMIs as biological indicators of stream health has been expanding in California for the last 10 years, becoming a core indicator for the state's Surface Water Ambient Monitoring Program (SWAMP). Bioassessments, however, have only recently been used for NPDES monitoring in southern California and their use has been limited to perennial streams. For example, bioassessment monitoring in most southern California Municipal Stormwater NPDES permits are less two years old and none has been monitoring for more than five years.

A key requirement of using bioassessments to monitor stream health is the development of scoring tools that give managers a simple index for determining if the biology of a site is in "good" or "bad" condition. Two such tools, the index of biotic integrity (IBI) and predictive models (OE), are currently available for scoring biological condition in southern California streams. However, while the IBI and OE models accurate describe stream health in perennial streams, there has been no calibration or validation of the IBI in nonperennial streams (which have no surface flow for a predictable length time each year), although these streams make up as much as 65% of the total stream length in southern California.

The goal of this project is to adapt bioassessment techniques for nonperennial streams. Our approach consists of five primary tasks: 1) develop GIS based maps to document the location of non-perennial streams within the boundaries of the San Diego Regional Water Board, 2) sample BMIs in these non-perennial streams at regular intervals to examine annual successional changes to the BMI fauna, 3) document the performance of existing bioassessment tools (IBIs and OE models) in non-perennial streams over a yearly cycle of flooding and drying and modify the existing perennial stream IBI for non-perennial streams as necessary, 4) determine whether there are anthropogenic stressors specific to non-perennial streams and whether the relationship between stressors and biotic condition varies over the flow cycle, and 5) provide outreach to stakeholders and regulators who need to assess the condition of non-perennial streams. We will integrate our study with the shared goals of complementary proposals aimed at developing algal-based indicators for non-perennial streams (PIN 9031) and mapping riparian habitat (PIN 9276).

4. **Project Goals**
   a. **Short-term Goals:** Identify extent of non-perennial stream reaches in San Diego County. Determine if existing bioassessment monitoring and assessment tools from perennial streams will apply to these unique habitats. Modify bioassessment tools for non-perennial streams if possible.

b. **Long-term Goals**: Serve as a pilot study for protecting non-perennial streams statewide.

5. **Project Location**: (lat/longs, watershed, etc.) This study extends throughout coastal San Diego County watersheds. This includes the San Juan, Santa Margarita, Carlsbad, Los Penasquitos, San Diego River, Pueblo San Diego, and Otay Hydrologic units.

a. **Physical Size of Project**: (miles, acres, sq. ft., etc.) approx 90 miles

b. **Counties Included in the Project**: San Diego, Orange County

c. **Legislative Districts**: (Assembly and Senate) Assembly: 66,73,74,75,76,77,78,79 Senate: 33,38, 39

6. **Which SWRCB program is funding this grant?** Please "X" box that applies.

☐ Prop 13 ☐ Prop 40 x Prop 50 ☐ EPA 319(h) ☐ Other

Grant Contact: Refers to Grant Project Director.

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Grant Time Frame: Refers to the implementation period of the grant.

From: Mar 2007 **To**: Mar 2010

Project Partner Information: Name all agencies/groups involved with project. California Department of Fish and Game, the Southern California Stormwater Monitoring Coalition

Nutrient and Sediment Load Reduction Projection: (If applicable) not applicable

Please provide a hard copy to your Grant Manager and an electronic copy to your Program Analyst for SWRCB website posting. All applicable fields are mandatory. Incomplete forms will be returned.